

PATENT COOPERATION TREATY

From the:
INTERNATIONAL SEARCHING AUTHORITY

To:

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PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

Date of mailing (day/month/year) 6 JAN 2005	
Applicant's or agent's file reference PC00617	FOR FURTHER ACTION See paragraph 2 below
International application No. PCT/AU2004/001435	International filing date (day/month/year) 20 October 2004
	Priority date (day/month/year) 23 October 2003
International Patent Classification (IPC) or both national classification and IPC Int. Cl. ⁷ G08B 17/00, 17/10, 17/103, 17/107	
Applicant MARTIN, Terence Cole	

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☒ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☒ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the IPEA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaustalia.gov.au Facsimile No. (02) 6285 3929	Authorized Officer CHARLES BERKO Telephone No. (02) 6283 2169
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Box No. I **Basis of the opinion**

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

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Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application

☒ claims Nos: 23

because:

☐ the said international application, or the said claim Nos.

relate to the following subject matter which does not require an international preliminary examination (*specify*):

☒ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. 23
are so unclear that no meaningful opinion could be formed (*specify*):

No meaningful construction can be placed on the claim.

☐ the claims, or said claims Nos.

are so inadequately supported by the description that no meaningful opinion could be formed.

☒ no international search report has been established for said claims Nos. 23

☐ the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:

the written form

☐ has not been furnished

☐ does not comply with the standard

the computer readable form

☐ has not been furnished

☐ does not comply with the standard

☐ the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-bis of the Administrative Instructions.

☐ See Supplemental Box for further details.

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Box No. IV Lack of unity of invention

1. ☐ In response to the invitation (Form PCT/ISA/206) to pay additional fees the applicant has:
- ☐ paid additional fees
 - ☐ paid additional fees under protest
 - ☒ not paid additional fees
2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rule 13.1, 13.2 and 13.3 is
- ☐ complied with
 - ☒ not complied with for the following reasons:

Multiple inventions are found in the application as follows:

Group 1.

(a) Claims 1-16, and 46-49, are directed to determination of the presence of particles of predetermined size(s) in a fluid sample. The former subgroup being characterised by responsiveness to a signal(s) sample and illumination by first and second wavelengths of light, while the latter is/are characterised by responsiveness to a logarithmic scaled signal exemplified in appended claims by an alarm.

(b) Claim 22, is directed to determination of a service interval for a particle monitor, is/are characterised by determination of the presence of dust particle(s) distinctly from smoke particles, and measure of the presence thereof, and providing indication when a predetermined threshold is reached.

(c) Claim 33, directed "In combination" to a biconvex lens with the monitor of claim 15, 21 or 32.

(d) Claim 44, directed to an apparatus to detect particles is characterised by a processor adapted to operate in accordance with a set of instructions, and adapted to perform the method of anyone of claims 1-14.

(e) Claim 45, directed to a computer program product, is characterised by a usable medium having readable program and system codes for detecting the presence of particles in accordance with anyone of claims 1-14 in association with a data processing system. *For the purpose of this report, this appended claim has been added to this group. However, a separate search would be required for completeness.*

Thus, what these sets of claims have in **common** is **determination of the presence of particles, and some indication thereof**. This is considered to constitute a "first" special technical feature.

[continued in Supplemental Box]

4. Consequently, this opinion has been established in respect of the following parts of the international application:
- ☐ all parts
 - ☒ the parts relating to claims Nos. 1-16, 22, 33, 44, 45, 46-49

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Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims 45	YES
	Claims 1-16, 22, 33, 44, 46-49	NO
Inventive step (IS)	Claims	YES
	Claims 1-16, 22, 33, 44, 45, 46-49	NO
Industrial applicability (IA)	Claims 1- 16, 22, 33, 44, 45, 46-49	YES
	Claims	NO

2. Citations and explanations:

Documents cited in the International Search Report:

- (a) WO 2001/059737
- (b) US 4181439
- (c) US 6414746
- (d) US 2002/0101345
- (e) WO 2000/007161
- (f) GB 2319604
- (g) US 3982130
- (h) GB 2273769
- (i) US 4426640
- (j) GB 2193570
- (k) US 4906978
- (l) GB 2267963

NOVELTY (N) Claims 1-16, 22, 33, 44, 46-49

Citations (a), (e) to (h) each discloses a smoke/particle detector arrangement using different wavelengths of light to illuminate particle samples, and determine presence thereof by comparison of signal responses, considered essentially to fall within the scope of the invention as claimed in claims 1, 15, and 46. While claim 15 does make reference to **logic comparison means**, such means are not evident in either claim 1 or 46 which are also independent claims, and is thus considered to lack significance. This feature is in any case considered to be well known, and therefore common general knowledge as illustrated by a number of the cited art. Claim 46 also further qualifies the compared signals as **logarithmic scaled**. Again this is not evident in the other independent claims and considered to lack significance.

The features added by appended claims 2-14, 16, and 47-49, including size of particles, comparison by subtraction/ratio, smouldering/smoke event, alarm trigger, pyrolysis, particular wavelengths/frequency of light - polarised/unpolarised, and use of processor means in conjunction with a set of instructions are considered to be elements of common general knowledge disclosed in/demonstrated by one or more of the cited art.

The claimed invention is considered to lack novelty.

INVENTIVE STEP (IS). Claims 1-16, 22, 33, 44, 45, 46-49

Claims 1-16, 22, 33, 44, 46-49: as above

[continued in Supplemental Box]

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Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

(a) The three independent claims (1, 15, and 46) reported on, are directed diversely to different combinations of integers and do not all fully define the monopoly sought, placing an undue burden on the addressee to ascertain the monopoly envisaged.

(b) Claim 23 does not read meaningfully and has not been searched nor reported on, as no meaningful construction could placed on it. If it is meant to be a dependent claim, then some substantial amount of text is missing.

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: **BOX IV**

Group 2. Claims 17-21, directed to a gain control apparatus adapted for providing particle monitor control, is/are characterised by first and second gain stage amplifiers such that amplifier frequency response is unaffected by controlled feedback.

This is considered to constitute a "second" special technical feature.

Group 3. Claims 24-31 directed to a particle monitoring chamber is/are characterised by a primary iris preventing light impinging directly on a lens adapted to focus light toward a receiver cell.

This is considered to constitute a "third" special technical feature.

Group 4. Claims 34-38, directed to determination of velocity of fluid flowing through a given area, is characterised by sensor paths of substantially similar temperature characteristics, and the determination based on measure of cooling effect of fluid passing the sensors.

This is considered to constitute a "fourth" special technical feature.

Group 5. Claims 39-43 directed to mounting a housing on a duct, is/are characterised by a tab element, shaped to fit the profile of the duct near the mounting area, and used to attach the housing.

This is considered to constitute a "fifth" special technical feature.

None of these sets of claims have any special technical features in common as required by Rule 13.2. The claimed invention lacks unity.

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Supplemental Box (2)

In case the space in any of the preceding boxes is not sufficient.

Continuation of: V

Additionally, when citations (j) to (l) are combined individually or severally with citation (i), as would be obvious to a person skilled in the art, the features of the invention as defined in claims 1-16, 22, 44, 46-49 are disclosed. Similarly when citations (e), (f) are combined with citation (i), the features of appended claims 22, and 44 are disclosed.

Also, citation (b) includes the use of a **bi-convex lens** in its disclosure, while citations (c) and (d), include **computer arrangements which of necessity inherently include computer readable program and system codes**. It would be obvious to a person skilled in the art to combine citation (a) with citation (b) to arrive at the combination defined in appended claim 33, and similarly combine citation (a) with (c) and/or (d) to arrive at the arrangement of appended claim 45.

The claimed invention is considered to lack inventiveness.